

## CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000  
SAN FRANCISCO, CA 94105-2219  
VOICE AND TDD (415) 904-5200  
FAX (415) 904-5400



## **SAMPLE POLICIES FOR PLANNERS DEVELOPING, AMENDING OR REVIEWING LCP POLICIES ON SHORELINE PROTECTIVE STRUCTURES, HAZARDS, AND BEACH EROSION**

Numerous studies of coastline and shoreline processes (some of which are cited in Exhibit A of this document) demonstrate that shoreline protective structures can have deleterious effects on beaches at their base and on more distant beaches due to interruption of sand supplies. There are also beach types that behave differently from one another in terms of erosion and accretion and different methods of shoreline protection that may have more or less applicability in any given situation.

The following sample policies are provided for planners who are working on LCP policies relating to hazards, beach erosion, and shoreline protective devices. They are organized in three parts that address new development, existing development, and long-range planning. These policies stem from Coastal Act sections 30253 and 30235. The discussion following each policy is explanatory only.

This information is intended to provide suggestions and ideas for local governments, however, it must be customized for particular situations and locations. Provision of these sample policies is not intended to represent that these policies are required or that, for any particular jurisdiction, the Coastal Commission would consider these policies adequate to carry out the applicable policies of the Coastal Act.

### **1. Policy Guidance: Ensure that new development will not need a shoreline protective device for the duration of its economic life.**

Discussion: Coastal Act section 30253(2) says new development may not “in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.” Shoreline protective devices can and do substantially alter natural landforms by greatly reducing erosion of the bluffs behind the device and accelerating erosion of the beach seaward of the device and of the bluffs on either side of the device. In addition, construction of shoreline protective devices can involve substantial grading of the bluff.

New development should be sited far enough from the bluff edge, or top of bluff, that it will not require a seawall, revetment or any other bluff alteration for the full life of the development. This is a two step effort — determining a safe distance from the bluff edge for development, and determining the location and configuration of the bluff edge at some time in the future, often taken to be the life of the development.

**2. Policy Guidance: Define the economic lifetime of structures as a minimum of 75 years (100 years is preferable).**

Discussion: While the Coastal Act does not define the economic lifetime of a structure, the Commission's ReCAP effort has shown that most structures last at least 75 years. Economic life may be developed from the general neighborhood character. However, structures will generally remain in good condition with regular repair and maintenance for at least 75 years after construction.

**3. Policy Guidance: Require all applications for a permit for new blufftop development to include a geologic report of the entire site with special attention to the area of demonstration, i.e., that area which lies 50 feet inland from the edge of the bluff or that area which lies between the top of the bluff and the point at which a line from the toe of the bluff inclined 20 degrees above horizontal intersects the surface, whichever is greater. The geologic report should be required to include a predicted erosion rate and a setback that will ensure the development will not require shoreline protection during its economic life, based on either a or b, below.**

**a. Develop a long-term annual average erosion rate, multiply this by the economic life of the structure and either multiply that by a safety factor or add a safety factor as a set distance. For example, if the rate of erosion is determined to be 3 inches per year, the economic life of the structure is 100 years, and the safety factor is 1.2, then the minimum setback is 30 feet (3 in. x 100 yrs. = 300 in., 300 in. = 25 feet, 25 feet x 1.2 = 30 feet). If the safety factor were a set distance of, say, 10 feet, and the rate of erosion and economic life of the structure were the same as in the preceding example, then the setback would be 35 feet. The safety factor may vary regionally, based on the quality of the shoreline change data and the size or magnitude of extreme erosion events.**

**b. Require the geologist to provide 75-year and 100-year setback lines and give the methodology for determining the setback.**

Discussion: The erosion rate and setback recommended by the geologist will enable the local government to ensure that new development on bluff tops and cliffs is safe from erosion and will not require shoreline protection during its useful life. The local government and coastal analysts will need information on the methodology both to check the thoroughness of the analysis and to compare it with other projects in the vicinity.

**4. Policy Guidance: In-fill development, i.e., new development between adjacent developed parcels, should be allowed no closer to the bluff edge than as indicated by the geologic report.**

Discussion: In areas where a vacant lot lies between two adjacent developed lots, the applicant will often propose a setback distance comparable to that of the adjoining developed properties. This has been found to be appropriate if:

- 1) the bluff edge is essentially a straight line and not concave at the location of the vacant lot and,
- 2) the existing structures are currently set back a distance that would equal the erosion rate appropriate to the economic lifetime of the proposed structure.

However, the required geologic report should still determine the full setback that would be necessary for the life of the development and this should be used in site design if it indicates a greater setback is needed.

**5. Policy Guidance: Define the bluff edge as the upper termination of a bluff, cliff, or sea cliff. In cases where the top edge of the cliff is rounded away from the face of the cliff as a result of erosion processes related to the presence of the steep cliff face, the bluff line or edge is that point nearest the cliff beyond which the downward gradient of the surface increases more or less continuously until it reaches the general gradient of the cliff. In a case where there is a step-like feature at the top of the cliff face, the landward edge of the uppermost riser is taken to be the cliff edge.**

Discussion: There are many instances where the edge of the blufftop is not a clear and there is not a dramatic change from a horizontal to a vertical surface. Often parcels are not horizontal but slope toward the sea, or there may be a stair-stepped configuration, or there may be gullies present which have cut landward back into the bluff top. Because erosion features, such as gullies, may be evidence of weaker, less stable areas, they must be considered when determining the blufftop setback. Where there may be confusion about the location of the blufftop, it may be appropriate to map the blufftop and include the map in the LCP, clearly identifying the date of the determination as a tool of comparison for future references.

**6. Policy Guidance: Require that blufftop landscaping use drought tolerant, native species.**

Discussion: Drought tolerant species do not need as much watering as other species. Adding water to the top of a bluff or bluff face can lead to accelerated bluff failure. Native species are adapted to the harsh conditions of bluff tops (wind, salt spray, etc.)

**7. Policy Guidance: Define an “area of high geologic hazard” as fault zones and land subject to dangers from liquefaction and other severe seismic impacts, unstable slopes regardless of slope angle, landslides, areas of coastal cliff instability, tsunamis, and slopes steeper than 30%.**

Discussion: Coastal Act section 30253(1) states that “new development shall minimize risks to life and property in areas of high geologic hazard.” These areas should be identified in the LCP and on adopted maps to enable minimization of risk. Depending on the local geologic structure, the appropriate slope percentage that constitutes an area of geologic hazard may be greater or less than 30 percent.

**8. Policy Guidance:** Accessory structures (e.g. patios, gazebos, etc.), if allowed, should be constructed in such a manner as to be easily relocated landward should they become threatened by shoreline erosion. CDPs authorizing accessory structures should be conditioned with the requirement that the permittee (and all successors in interest) shall remove the accessory structure(s) if threatened by shoreline erosion and that no shoreline protection device shall be allowed for the sole purpose of protecting the accessory structure(s). Accessory structures should not be considered structures for the purposes of shoreline protection as provided in Section 30235 of the Coastal Act.

Discussion: In certain circumstances such as a small parcel it may be appropriate to allow some accessory structures in the setback area. However, unless there is no other developable area large enough for the minimum development consistent with the zone district, this development should only be allowed if conditionally authorized such that, once threatened, it is relocated or removed. There could also be a situation where a permanent structure is proposed to be located significantly landward of the required bluff setback and a temporary structure is proposed between the permanent structure and the bluff setback area. Again, the temporary structure should only be allowed if it can be relocated if threatened by erosion. Armoring should not be used to protect temporary structures.

**9. Policy Guidance:** Ensure that land divisions of coastal fronting property will result in new parcels that can be developed with structures that will not require shoreline protection during a 75 or 100 year economic life. Prohibit land divisions that will result in parcels that are unbuildable, e.g., exclusively areas of high geologic hazard; and that each new parcel has at least the minimum developable area, consistent with the zone district, outside of any high geologic hazard area.

Discussion: Coastal Act section 30106 defines land divisions and lot splits as development. Such divisions should not be authorized if the increase in parcel numbers will increase the demand for shoreline protection. Land divisions should not create unbuildable lots, e.g., entirely on a bluff face, or lots too small to allow for a single-family residence landward of the bluff setback.

**10. Policy Guidance:** Allow new development on sand dunes only when required to avoid a “taking” of property. Establish a sand dune preservation zone district in the zoning ordinance to provide standards for development on sand dunes when such development must be allowed. Site new development on sand dunes 1) landward of the most seaward

line of vegetation, 2) in a way that avoids or minimizes adverse impacts to natural dune formation, and 3) in a way that does not adversely affect sandy beach habitat. Require a geologic report to substantiate the stability and integrity of the dune and a biologic report to identify potential biologic impacts and mitigation therefore. Where there is no vegetation, require a geologic report to establish a line seaward of which no new development will be allowed. Ensure that no new development is allowed seaward of the inland extent of the estimated wave runup from the 100-year design storm. Where existing subdivided lots lie entirely seaward of the most seaward line of vegetation or seaward of the inland extent of the estimated 100 year storm wave runup, allow only minimum development, and limit site cover and site disturbance to the extent necessary for the minimum development.

Discussion: The existence of vegetation on dunes is evidence that some amount of stability exists and that the area is not subject to regular wave runup, although this needs to be substantiated by a geologic report, and a biologic report is needed to identify impacts to flora and/or fauna and to identify mitigation. If there is no vegetation, it is more difficult to intuitively discern the area of stability; in those cases it is imperative that a geologic report determine the inland extent of the wave runup from the 100-year storm. Alternatively, this could already be mapped on the land use plan and zoning maps. There are subdivisions that include lots well onto the beach. If these are in fact legal lots of record, then some development must be allowed. In those cases, the amount of development should be limited to reduce impacts to coastal resources and to limit the amount of loss when the inevitable destructive storm occurs.

### ***Policy Guidance for Existing Development***

#### **1. Policy Guidance: Allow shoreline protective devices only in the following instances:**

- a. when required to serve coastal-dependent uses, or**
- b. when required to protect existing principal structures in danger from erosion, or**
- c. when required to protect public beaches in danger from erosion, AND,**
- d. when impacts to shoreline sand supply are mitigated.**

Discussion: Coastal Act Section 30235 sets up several tests to determine if shoreline protection is an appropriate response to erosion. First, is the subject property a coastal dependent use, existing structure or public beach? If yes, is there a documented danger from erosion. And, third, if yes, does the proposed protection minimize or eliminate impacts to sand supply. Almost every shore protection structure will have some unavoidable impacts on sand supply, as well as the visual character of the shoreline. For areas where there are accessory buildings seaward of the principal structure, the local government may want to consider adding the language to the LCP to prohibit the use of armoring to protect accessory structures. The Coastal Commission has found that relocating ancillary

facilities may be a feasible, less environmentally damaging alternative than constructing a shoreline protective device. In general, accessory structures can usually be relocated, while it is more problematic to relocate the principal residence or building. Shoreline protective devices should only be authorized when necessary and only to protect those structures that cannot feasibly be protected in any other manner and that are or contain the principal use of the site, and when impacts to shoreline sand supply are mitigated. For all situations, the applicant should consider alternatives to shoreline protective devices; for accessory structures relocation should be thoroughly reviewed.

**2. Policy Guidance: Define principal structures as any primary living quarters, main commercial buildings, and functionally necessary appurtenances to those structures such as septic systems and infrastructure. Facilities such as privately owned, non-coastal dependent pipelines, roads, utilities and accessory structures (e.g. storage sheds, decks, patios, gazebos, walkways, landscaping, etc.) are not considered to be principal structures.**

Discussion: The Coastal Act simply uses the words “existing structures” without any qualifications or definitions in Section 30235. By limiting development for which shoreline protective devices may be constructed, coastal armoring and consequent beach erosion may be slowed. The Coastal Commission has found that it is generally feasible to relocate ancillary structures while it is more problematic, although not necessarily infeasible, when considering the principal residence or building. Relocation of ancillary facilities may be environmentally less damaging than a seawall and more protective of coastal resources. Coastal Act section 30235 states that seawalls shall be permitted when required to protect existing structures. If it is feasible to relocate structures, then a seawall is not required for protection.

**3. Policy Guidance: Require applications to include an analysis of alternatives that are capable of protecting the existing structure from erosion including, but not limited to: a) no action; b) involvement in regional beach nourishment; and/or c) the relocation of the threatened structure. Require the following information also: amount of beach that will be covered by the shoreline protective device; the amount of beach that will be lost over time, through passive erosion; total lineal feet of shoreline protective devices within the littoral cell where the device is proposed; and, the cumulative impact of added shoreline protective devices for the littoral cell within which the proposed device will be located.**

Discussion: LCPs should establish thorough and understandable filing requirements that take into account local and regional shoreline situations. This will allow an analysis of cumulative impacts within the littoral cell and allow the impacts of the individual project to be considered in a regional context. This in turn can provide the basis for non-armored responses to coastal bluff erosion.

**4. Policy Guidance:** Define the replacement of residences destroyed by storm waves or bluff failure as “minor development,” or require submittal of plans but waive the requirement for actually obtaining a permit if the replacement residence conforms to applicable existing zoning requirements, is for the same use as the destroyed structure, does not exceed either the floor area, height, or bulk of the destroyed structure by more than 10 percent, and if the replacement residence is setback on the parcel at least 60 percent of the minimum bluff edge setback for new structures in the same area with the same geologic structure. Do not allow a structure to be relocated to a wetland, stream, or other sensitive habitat.

Discussion: The Coastal Act states that structures destroyed by a disaster may be replaced without need for a coastal development permit if the structure conforms to applicable existing zoning requirements, is for the same use, does not exceed the floor area, height, or bulk of the destroyed structure by more than 10 percent and if the structure is sited at the same location as the destroyed structure. However, it may be physically impossible, or at least infeasible, to locate the replacement structure in the same location as the destroyed structure because, for example, bluff failure may result in the physical loss of the original location. This means that a coastal development permit would be necessary to relocate the structure away from the original location to a safer location. However, in some cases, a landowner may seek to locate a replacement residence in its original location simply to avoid permit requirements. This could result in the residence not being placed in the safest area on the site. If the relocation is defined as a “minor development,” then, while a permit would be required, there would be no requirement for a public hearing. Alternatively, the requirement for actually obtaining a permit could be waived. In that case, the applicant would submit plans for review, but no permit would be issued or necessary. Under either of these alternatives, the owner would have an incentive to relocate the structure to a safer location where shoreline protection would not be necessary. This would further the goals of protecting existing structures, reducing the need for shoreline protective structures, and reducing beach erosion. The proposed policy guidance reduces the immediate and future need for shorelines protective structures without causing beach erosion and its relocation provisions may be more economically feasible than reconstructing in the same location with armoring.

**5. Policy Guidance:** Encourage the relocation of threatened structures, rather than constructing shoreline protective devices, by waiving permit filing fees for applications to relocate structures or providing variances from zoning requirements such as side or front yard setbacks, etc.

Discussion: Relocation of a structure away from an eroding bluff or out of the reach of storm waves may provide the applicant with many years of future site use without the costs and effects of long term shoreline protection.

**6. Policy Guidance:** Annually notify in writing all blufftop property owners that the placement of emergency shoreline protective devices shall be allowed only when the need for such protection was in fact caused by a sudden, unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property, or essential public services. Emergency permits will become void and the structure authorized by them considered a public nuisance unless the property owner makes an application for a regular coastal development permit within 30 days of the issuance of the emergency authorization.

Discussion: Emergency permits are available as a possible response to a sudden, unexpected occurrence. It is not an emergency if a condition has been known for a long time, but no action is taken to address the condition until it becomes critical. Unfortunately, emergency shoreline protection is often installed during difficult conditions and often cannot be designed or constructed with the same level of care as shoreline protection that is designed and constructed in a timely manner. Annual notices will encourage coastal property owners to plan ahead and should suggest that coastal property owners retain an engineering geologist to assess whether the property is stable or in need of some form of stabilization. Also all emergency permits must be followed up by regular permit applications to ensure that the standards for shoreline protective structures are met and to verify that the emergency device is still needed. It can be quite costly to remedy poorly designed or constructed emergency structures, so proper planning and design initially is important.

**7. Policy Guidance:** Prohibit new shoreline protective structures from extending onto a beach farther than a straight line connecting the nearest corners of adjacent shoreline protective structures, if any. Require new shoreline protective devices to cover the least amount of beach area as is necessary to provide adequate protection for the existing principal structure.

Discussion: If a new shoreline protective structure is designed to fill in between two existing shoreline protective structures, the “in-fill” should only be allowed for one or two urban lots, at a maximum. Since shoreline protection will interfere with shoreline access and sediment transport during some conditions, shore protection structures should be sited as far landward as possible to minimize these effects.

**8. Policy Guidance:** Send notices of shoreline protective device permit applications to all local governments with shoreline within the same littoral cell.

Discussion: The littoral cell is the natural boundary for dealing with beach sand supply and movement. Without knowing the range of shore developments that is proposed for a littoral cell regardless of political jurisdiction, other jurisdictions cannot take any sort of coordinated action to preserve and/or restore beaches.



**9. Policy Guidance: Prohibit additional permanent structures on bluff faces, except for engineered public beach access where no feasible alternative means of public access exists.**

Discussion: New structures such as stairways added to bluff faces could become existing structures eligible for a shoreline protective device when threatened by erosion. This in turn adds to shoreline armoring. Among other things, the Coastal Act protects and encourages public access to beaches. Therefore, local governments should consider prohibiting all new stairways on bluff faces unless no feasible alternative means of public access to a beach exists.

**10. Policy Guidance: Require that blufftop landscaping use drought tolerant native species whenever possible.**

Discussion: Drought tolerant native species do not need as much watering as other species. Adding water to the top of a bluff can lead to accelerated bluff failure. Blufftop landscaping should be designed to minimize irrigation and avoid artificial soil saturation. Native species are adapted to the harsh conditions of bluff tops (wind, salt spray, etc.).

**11. Policy Guidance: Require all existing, non-permitted shoreline protective structures constructed after January 1, 1973 to obtain a coastal development permit. Declare non-permitted shoreline protective structures a public nuisance. Require the property owner to apply for a coastal development permit for such structures no later than one year from the date of certification of this policy by the Coastal Commission. Failure to meet the deadline may result in the local government posting the property with a notice of violation and recording it against the property.**

Discussion: Shoreline protective devices that were built after January 1, 1973, without coastal permits, are illegal. Many of these devices were not built according to standard engineering practices and so may pose a hazard to the public or to the property owner through premature failure. To require these unpermitted structures to obtain a permit would allow for review and possible correction of substandard structures.

**12. Policy Guidance: If an in lieu fee mitigation program exists, require payment of an in lieu fee to support beach nourishment efforts in a manner proportionate to the quantifiable effects of the shoreline protective device on the amount of sand that would have been nourishing the beach in the absence of the shoreline protective device.**

Discussion: The Commission has designed and implemented a methodology for making such a calculation. In many areas with shoreline erosion problems, it may be appropriate to incorporate an analogous methodology into the LCP.

## ***Policy Guidance For Long-Range Planning***

**1. Policy Guidance:** Inventory available studies on local and regional coastal processes and beach resources; participate in studies to fill in information gaps about regional effects of shoreline protective structures on beach erosion and methods to counteract beach erosion. Establish an Overlay or Geologic Hazard Assessment District (include tsunamis) and designate areas of coastal resource significance (e.g., sand dunes and areas of high geologic hazard) on the LUP and zoning maps, to limit in-filling for relatively undeveloped areas and to limit seaward encroachment of development.

Discussion: This type of information, whether compiled from existing sources or undertaken by the local government itself, will provide a basis for implementing long range solutions, other than armoring, to the hazards associated with shoreline erosion.

**2. Policy Guidance:** Create and maintain a database/file of geotechnical reports from individual projects for use in analysis of regional effects of shoreline protective structures, including documentation of interference with sand transport, loss of sand from the beach, the amount of beach area already covered by shoreline protection devices, location of such encroachments, and the cumulative impacts of those devices on recreational use.

Discussion: Such a data base can serve both the local government and applicants by allowed rapid recall of past project information.

**3. Policy Guidance:** Develop an in-lieu fee mitigation program to allow for mitigation of seawall impacts through payment of an in-lieu fee that is used to replenish beaches in the same littoral cell as the seawall.

Discussion: In natural areas and/or areas not already stabilized by shoreline protective devices, armoring halts erosion of the area behind the protective device and hence eliminates a source of future beach material, causes increased erosion of the beach seaward of the device, and can interfere with longshore transport of sand within the littoral cell. This type of policy encourages local governments to develop programs for collecting in-lieu fees that can be used to mitigate some of the permanent and adverse effects of armoring on public resources. Such a policy would enable the creation of a fund with which the relevant local government could fund beach nourishment. Utilize information and expertise from the SANDAG (San Diego Association of Governments) and BEACON (Beach Erosion Authority for Control and Nourishment) experiences as appropriate (Contact the Coastal Commission's San Diego or Ventura office for further information).

**4. Policy Guidance:** Monitor and comment on other jurisdiction's activities which may affect natural sand movement and supply on the local governments beaches.

Discussion: Ideally there would be a multi-jurisdictional entity that would study shoreline processes, shoreline change and long-term trends and provide a forum to discuss projects that could affect other jurisdictions within the littoral cell. In any event, local tracking of projects will help to keep all jurisdictions aware of activities and provide them an opportunity to comment on projects that may result in adverse effects on their beaches.

**5. Policy Guidance: Develop a comprehensive shoreline protection program that includes regular shoreline surveys to develop short and long-term shoreline trends, identifying priorities for types of shoreline protection, and developing programs for opportunistic beach nourishment using clean dredge material, clean material from flood control structures, clean excavation material and other innovative sources. Identify which beaches have priority for nourishment.**

Discussion: The littoral cell is the most reasonable geographic division for studying shoreline processes and shoreline trends. Since jurisdictional boundaries were not established with concern for littoral cell boundaries, a regional, multi-jurisdictional entity would be the ideal forum for a comprehensive shoreline program. If no such program exists, local jurisdictions can undertake a great deal of useful study and examination of shoreline processes on a smaller and more manageable section of shoreline within their local boundaries. Such program should identify the major factors that influence coastal processes within the cell and concentrate on those factors over which the local jurisdiction has control.

**6. Policy Guidance: Rank the types of permissible shoreline protective devices in order of least to most potential coastal impact and set forth technical criteria and standards for the structural design of shoreline protective devices.**

Discussion: This will depend on the local shoreline characteristics and access considerations.

**7. Policy Guidance: Encourage voluntary consolidation or purchase of property, or development of a transfer of development credit program as a means to reduce development potential of coastal fronting land.**

**8. Policy Guidance: Seek federal and state funds to conduct the following types of studies: source of harbor deposition material, the impact of beach erosion on beach access, the effect harbor deposition has on beach replenishment downcoast of the harbor; the impact of harbor dredging on potential tsunami hazard, and the direct and indirect costs of harbor dredging to the local government or Harbor District.**

## LCP Policy Matrix

### Local Coastal Program Policies and Ordinances Relating to Shoreline Protective Devices

The matrix below identifies a selection of documents that contain policies about shoreline protective devices. The specific language of each reference (excepting BEACON) is provided in a table following the matrix. Each row in the table corresponds to a cell location on the matrix. For example, the long range planning policies on from the City of Imperial Beach can be found in table row 2b. Unless otherwise identified, all references are to Land Use Plans. Where both Land Use Plan policy and Implementation Plan ordinance sections are listed, as in cell 1a, the Land Use Plan policies are listed first.

| LOCAL COASTAL PROGRAM                                     |  |   |  |   |   |   |  |
|---|--|---|--|---|---|---|--|
| Type of Policy  | a  | b   | c  | d   | e   | f   | g  |
| 1<br>Setbacks for Development on Blufftops and Sand Dunes | San Luis Obispo County<br><i>Hazards Policy 6 Coastal Zone Land Use Ordinance Section 23.04.118.</i> | Malibu/ Santa Monica Mountains<br><i>Policies 163 and 164</i>       | Marin County<br><i>Natural Dune &amp; Sandy Beach Protection Policy 20</i> | City of Pismo Beach<br><i>Bluff Erosion/ Instability Section, Bluff Top Setbacks Policy S-3</i> | Humboldt County<br><i>North Coast Area Plan Definitions: “Bluff Edge” or “Cliff Edge”</i> | Mendocino County<br><i>Coastal Element Hazards Policy 3.4-7</i> | City of Encinitas<br><i>Hazard Policy 1.6f</i> |
| 2<br>Long Range Planning                                  | City of Ventura<br><i>15.9 BEACON Program</i>  | City of Imperial Beach<br><i>Policy S-11</i>                        | City of Newport Beach<br><i>Visitor Serving Facility section Policy 1</i>  | Marin County<br><i>Policies 7 and 8 Shoreline Protection and Hazards</i>                        | City of Encinitas<br><i>Hazard Policy 1.7</i>   |   |  |
| 3<br>Public Access  | City of Carpinteria<br><i>Policy D.1.6 A.1.1</i>   | Carmel Area of Monterey County<br><i>Specific Policies 2.7.4.10</i> | City of Santa Barbara<br><i>Marine Resources Policy 6.5</i>                | Marin County<br><i>Policy 4 Marine Protection and Hazards</i>                                   | Del Monte County<br><i>LCP, Zoning Ordinance c.1.</i>                                     |   |  |
| 4<br>Existing Development                                 | Santa Barbara County<br><i>Seawall and Shoreline</i>   | City of Santa Barbara<br><i>Policy 6.3</i>                          | San Mateo County<br><i>Hazards Component</i>                               |   |   |   |  |

Sample LCP Policies On Shoreline Protective Structures, Hazards, and Beach Erosion

| LOCAL COASTAL PROGRAM   |   |   |  |  |  |  |   |
|---|---|---|--|--|--|--|---|
| TYPE OF POLICY  | a   | b   | c  | d  | e  | f  | g |
|   | <i>Structures Policy 3.1</i>  |   | <i>Policy 9.12</i>   |  |  |  |   |
| <b>5<br/>Historical Background/<br/>Basis for Limiting Shoreline Structures</b> | City of Santa Barbara: <i>Water &amp; Marine Resources section re: Dredging Activities and Seawalls, pg. 3–67 ff.</i> |   |  |  |  |  |   |
| <b>6<br/>Hazard Area</b>  | San Luis Obispo County<br><i>Hazards Policy 7 Coastal Zone Land Use Ordinance Section 23.07.080</i>                   | City of Sand City<br><i>Natural Hazards Policies 4.3.10, 4.3.11</i> | San Mateo County<br><i>Hazards Component Policies 9.1, 9.2, 9.3, 9.10</i>                    |  |  |  |   |
| <b>7<br/>New Development</b>  | Carmel Area of Monterey County<br><i>General and Specific Policy 2.7.3.3</i>  | San Mateo County<br><i>Hazards Component Policy 9.11.</i>           | City of Grover Beach<br><i>Marine Resource Areas Recommendation, Sand Dunes Policy No. 1</i> | Marin County<br><i>Unit 1, Dune Policies 20 and 21</i> | Malibu/Santa Monica Mtns.<br><i>Bluff and Beach Erosion Policy</i> | City of Encinitas<br><i>Hazards Policy 1.6f.</i> |   |

| LOCAL COASTAL PROGRAM |  |   |  |   |   |   |   |
|-----------------------|--|---|--|---|---|---|---|
| TYPE OF POLICY        | a  | b   | c  | d | e | f | g |
| 8<br>Emergency        | Marin City<br>Policy 7<br>Shoreline<br>Protection and<br>Hazards Section   | City of Encinitas<br>Zoning<br>Ordinance<br>Section<br>30.34.020,<br>Coastal Bluff<br>Overlay Zone,<br>Subsection E,<br>Temporary<br>Emergency<br>Protection<br>Devices | San Luis Obispo<br>County<br>Coastal Zone<br>Land Use<br>Ordinance,<br>Section<br>23.03.045,<br>Emergency<br>Permits |   |   |   |   |
| 9<br>Regional         | BEACON (Beach Erosion Authority for Control Operations and Nourishment), a Joint Powers Authority.<br>Please contact Commission's Ventura office for further information about BEACON. |   |  |   |   |   |   |

## LANGUAGE OF POLICIES IDENTIFIED IN LCP TABLE

### EXAMPLES OF USEFUL POLICIES RELATING TO SHORELINE HAZARDS, SHORELINE PROTECTIVE DEVICES, & BEACH EROSION (Current as of August 1996)

#### This is Not Meant to be a Comprehensive List of All Useful LCP Policies.

THE EXAMPLES ARE MEANT TO GIVE COMMISSION AND LOCAL GOVERNMENTS LCP PLANNERS A STARTING POINT FOR DEVELOPING NEW POLICIES. STATE-OF-THE-ART INFORMATION SHOULD BE USED IN DEVELOPING NEW LCP POLICIES. AS NEW LCP POLICIES ARE DEVELOPED THEY CAN BE ADDED TO THIS LIST.

| TYPE OF POLICY  | JURISDICTION  |
|---|---|
| <p><b>Setbacks for Development on Blufftops and Sand Dunes</b></p> <p><b>1a</b></p> | <p><b><u>San Luis Obispo County, Hazards Policy 6:</u></b> New development or expansion of existing uses on blufftops shall be designed and set back adequately to assure stability and structural integrity and to withstand bluff erosion and wave action for a period of 75 years without construction of shoreline protection structures which would require substantial alterations to the natural landforms along bluffs and cliffs. A site stability evaluation report shall be prepared and submitted by a certified engineering geologist based upon an on-site evaluation that indicates that the bluff setback is adequate to allow for bluff erosion over the 75-year period. Specific standards for the content of geologic reports are contained in the Coastal Zone Land Use Ordinance. [THIS POLICY SHALL BE IMPLEMENTED PURSUANT TO SECTION 23.04.118 OF THE CZLUO]</p> <p><i>CCC Staff comment: This policy is straightforward and, like many of the County's policies, specifically calls out the section of the Implementation Plan (zoning ordinance) which implements the policy, making it very easy to move from the policy directly to the particular requirements of the implementing ordinance.</i></p> <p><b><u>San Luis Obispo County Coastal Zone Land Use Ordinance (CZLUO), Section 23.04.118, Blufftop Setbacks:</u></b></p> <p>...The required setback shall be the larger of the two required by subsections a. and b. of this section.</p> <p><b>a. Stringline setback method:</b> Where 50 percent of the lots adjacent to the coastline within 300 feet of the site are developed at the time of application, no part of a proposed new structure, including decks, shall be located closer to the seaward property line of the site that the greatest distance determined by either of the following:</p> <p>(1) A line between the most seaward portions of the structures on the adjacent lots; or</p> |

| TYPE OF POLICY | JURISDICTION   |
|----------------|--|
|                | <p>(2) Where there is substantial variation of land from between adjacent lots, the average setback of structures o the adjoining lots shall be used.</p> <p><b>b. Bluff retreat setback method:</b> New development or expansion of existing uses on bluffs shall be designed and set back from the bluff edge a distance sufficient to assure stability and structural integrity and to withstand bluff erosion and wave action for a period of 75 years without construction of shoreline protection structures that would in the opinion of the Planning Director require substantial alterations to the natural landforms along bluffs and cliffs. A site stability evaluation report shall be prepared and submitted by a certified engineering geologist based upon an on-site evaluation that indicates that the bluff setback is adequate to allow for bluff erosion over the 75-year period. The report shall accompany the land use permit application, and shall contain the following information:</p> <ul style="list-style-type: none"> <li>(1) Historic, current and foreseeable cliff erosion, including investigation of recorded land surveys and tax assessment records in addition to the use of historic maps and photographs, where available, and possible changes in shore configuration and sand transport.</li> <li>(2) Cliff geometry and site topography, extending the surveying work beyond the site as needed to depict unusual geomorphic conditions that might affect the site and the proposed development.</li> <li>(3) Geologic conditions, including soil, sediment and rock types and characteristics in addition to structural features such as bedding, joints, and faults.</li> <li>(4) Evidence of past or potential landslide conditions, the implications of such conditions for the proposed development, and the potential effects of the development on landslide activity.</li> <li>(5) Wave and tidal action, including effects of marine erosion on seacliffs.</li> <li>(6) Ground and surface water conditions and variations, including hydrologic changes caused by the development (e.g., introduction of sewage effluent and irrigation water to the groundwater system; alterations in surface drainage).</li> <li>(7) Potential effects of seismic forces resulting from a maximum credible earthquake.</li> <li>(8) Effects of the proposed development including sighting and design of structures, septic system, landscaping, drainage, and grading, and impacts of construction activity on the stability of the site and adjacent area.</li> <li>(9) Potential erodibility of the site and mitigation measures proposed to minimize erosion problems during and after construction. Such measures may include but are not limited to landscaping an drainage design.</li> <li>(10) The area of demonstration of stability shall include the base, face, and top of all bluffs and cliffs. The extent of the bluff top considered should include the area between the face of the bluff and a line described on the bluff top by the intersection of a plane inclined a 20-1/4 degree angle from the horizontal passing through the toe of the</li> </ul> |



| TYPE OF POLICY  | JURISDICTION   |
|---|--|
|   | <p>bluff or cliff, or 50 feet inland from the edge of the cliff or bluff, whichever is greater.<br/> <b>(11)</b> Any other factors that may affect slope stability.</p>  |
| <p><b>Setbacks for Development on Blufftops and Sand Dunes</b><br/> <b>1b</b></p> | <p><b><u>Malibu/Santa Monica Mountains</u></b></p> <p><b><u>Policy 163:</u></b> Continue to require an engineering report on all proposed bluff-top development to insure geologic stability, adequate structural setback and appropriate mitigation of on-site runoff.</p> <p><b><u>Policy 164:</u></b> On blufftops, new development shall be set back a minimum of 25 feet from the top of the bluff or at a stringline drawn between the nearest corners of adjacent structures, whichever distance is greater, but in no case less than would allow a 75-year useful life for the structure.</p>  |
| <p><b>Setbacks for Development on Blufftops and Sand Dunes</b><br/> <b>1c</b></p> | <p><b><u>Marin County, Natural Dune &amp; Sandy Beach Protection Policy 20:</u></b> Development of other shorefront lots within the Stinson Beach and Seadrift areas shall assure preservation of the natural sand dune formation in order to protect environmentally sensitive dune habitat and vegetation and to maintain the natural protection from wave runoff that such natural dunes provide. Where no dunes are evident, any new development on shorefront lots shall be set back behind the first line of terrestrial vegetation to the maximum extent feasible, in order to minimize the need for protective works, to protect sandy beach habitat, and to provide a buffer area between private and public use areas in order to protect both the scenic and visual character of the beach, and the public right to access the use and enjoyment of dry sand areas.</p> |
| <p><b>Setbacks for Development on Blufftops and Sand Dunes</b><br/> <b>1d</b></p> | <p><b><u>City of Pismo Beach, Bluff Erosion/Instability Section, Bluff Top Setbacks Policy S-3:</u></b> All structures shall be set back a safe distance from the top of the bluff in order to retain the structures for a minimum of 100 years, and to neither create nor contribute significantly to erosion, geologic instability or destruction of the site or require construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.</p>  |
| <p><b>Setbacks for Development on Blufftops and Sand Dunes</b><br/> <b>1e</b></p> | <p><b><u>Humboldt County North Coast Area Plan Definitions, “Bluff Edge” or “Cliff Edge.”</u></b> is the upper termination of a bluff, cliff or seacliff. When the top edge of the cliff is rounded away from the face of the cliff as a result of erosional processes related to the presence of the steep cliff face, the edge shall be defined as that point nearest the cliff beyond which the downward gradient of the land surface increases more or less continuously until it reaches the general gradient of the cliff. In a case where there is a step like feature at the top of the cliff face, the landward edge of the topmost riser shall be taken to be the cliff edge.</p>  |

| TYPE OF POLICY  | JURISDICTION  |
|---|---|
| <p><b>Setbacks for Development on Blufftops and Sand Dunes</b><br/><b>1f</b></p>  | <p><b><u>Mendocino County Coastal Element Hazards Policy 3.4-7</u></b> The County shall require that new structures be set back a sufficient distance from the edges of bluffs to ensure their safety from bluff erosion and cliff retreat during their economic life spans (75 years). Setbacks shall be of sufficient distance to eliminate the need for shoreline protective works. Adequate setback distance will be determined from information derived from the required geologic investigation and from the following setback formula:</p> $\text{Setback (meters)} = \text{Structure life (years)} \times \text{retreat rate (meters/year)}$ <p>The retreat rate shall be determined from historical observation (e.g., aerial photographs) and/or from a complete geotechnical investigation.</p>  |
| <p><b>Setbacks for Development on Blufftops and Sand Dunes</b><br/><b>1g</b></p> <p><b>Setbacks for Development on Blufftops and Sand Dunes</b><br/><b>1g</b><br/><b>(cont'd)</b></p> | <p><b><u>City of Encinitas Hazard Policy 1.6f</u></b> The City shall provide for the reduction of unnatural causes of bluff erosion, as detailed in the Zoning Code, by:...</p> <p>Requiring new structures and improvements to existing structures to be set back...40 feet from coastal blufftop edge with exceptions to allow a minimum coastal blufftop setback of no less than 25 feet. For all development proposed on coastal blufftops, a site-specific geotechnical report shall be required. The report shall indicate that the coastal blufftop setback will not result in risk of foundation damage resulting from bluff erosion or retreat to the principal structure within its economic life and with other engineering evidence to justify the coastal blufftop setback.</p> <p>On coastal bluffs, exceptions to allow a minimum setback of not less than 25 feet shall be limited to additions or expansions to existing principal structures which are already located seaward of the 40 foot coastal blufftop setback, provided the proposed addition or expansion is located no further seaward than the existing principal structure, is set back a minimum of 25 feet from the coastal blufftop edge, and the applicant agrees to remove the proposed addition or expansion, either in part or entirely, should it become threatened in the future.</p> <p>In all cases, all new construction shall be specifically designed and constructed such that it could be removed in the event of endangerment and the applicant shall agree to participate in any comprehensive plan adopted by the City to address coastal bluff recession and shoreline erosion problems in the City</p> <p>This does not apply to minor structures that do not require a building permit, except that no structures, including walkways, patios, patio covers, cabanas, windscreens, sun decks, lighting standards, walls, temporary accessory building not exceeding 200 square feet in area, and similar structures shall be allowed within five feet from the bluff top edge... .</p> |

| TYPE OF POLICY                                  | JURISDICTION  |
|---|---|
| <p><b>Long Range Planning</b><br/><b>2a</b></p> | <p><b><u>City of Ventura, 15.9, BEACON Programs</u></b> : Continue to support the educational, legislative and research programs of the Beach Erosion Authority for Control Operations and Nourishment (BEACON).</p> <p><b><u>15.9.1</u></b>: Provide City support and/or sponsor new legislation to mitigate regional sand transport and supply impacts.</p> <p><b><u>15.9.2</u></b>: Provide City support for the acquisition of grant funds to conduct regional sand resource studies.</p> <p><b><u>15.9.3</u></b>: Provide City support for sand supply research programs, such as the California Storm and Tidal Wave Study conducted in San Diego County by the U.S. Army Corps of Engineers.</p>   |
| <p><b>Long Range Planning</b><br/><b>2b</b></p> | <p><b><u>City of Imperial Beach, Policy S-11</u></b> The City should protect property by:</p> <ul style="list-style-type: none"> <li>a) Creating artificial dunes pursuant to SANDAG technical specifications.</li> <li>b) Developing a coastal shoreline protection device ordinance for the design and construction of seawalls and revetments.</li> <li>c) Developing erosion management measures such as irrigation controls, landscaping ordinances, and other measures suitable to the changing nature of the Imperial Beach shoreline.</li> <li>d) Working in coordination with SANDAG and other coastal cities in developing a regional beach replenishment program and continuing to implement the adopted “Shoreline Preservation Strategy for the San Diego Region.”</li> </ul>          |
| <p><b>Long Range Planning</b><br/><b>2c</b></p> | <p><b><u>City of Newport Beach LUP (1/9/90 version, p. 33) Visitor Serving Facilities section, Policy No. 1</u></b> : Proposals for the construction of anti-erosion structures, offshore breakwaters, or future marinas shall be examined in light of their potential ability to conflict with the City’s mandate to preserve in its natural state the ocean beaches, water, surf action, and coastal shoreline in a manner that will ensure their availability for continued public use and enjoyment.</p>  |
| <p><b>Long Range Planning</b><br/><b>2d</b></p> | <p><b><u>Marin County Policies 7 and 8, Shoreline Protection and Hazards</u></b></p> <p><b>7.</b> Because revetments, seawalls or other shoreline protective works can be detrimental to maintenance of natural shoreline processes and can interfere with visual enjoyment and coastal access, such works are discouraged. The County of Marin through the LCP and other documentation has identified those coastal areas potentially subject to significant wave and run-up erosion.</p> <p><b>8.</b> It shall be County policy to encourage property owners subject to ocean-front erosion hazards to develop responses to such hazards prior to emergency conditions. Where contiguous properties are subject to generally similar erosion hazards, joint program development should occur.</p> |

| TYPE OF POLICY                                     | JURISDICTION   |
|--|--|
| <p><b>Long Range Planning</b></p> <p><b>2e</b></p> | <p><b><u>City of Encinitas Hazard Policy 1.7</u></b> The City shall develop and adopt a comprehensive plan, based on the Beach Bluff Erosion Technical Report prepared by Zeiser Kling Consultants Inc., (dated January 24, 1994), to address the coastal bluff recession and shoreline erosion problems in the City. Said plan shall include, at minimum, components that deal with all the factors affecting the bluffs in Encinitas. These include, but are not limited to, minimum blufftop setback requirements for new development/redevelopment; alternatives to shore/bluff protection such as beach sand replenishment; removal of threatened portions of a residence or the entire residence or underpinning of existing structures; addressing bluff stability and the need for protective measures over the entire bluff (lower, mid and upper); impacts of shoreline structures on beach and sand areas as well as mitigation for such impacts; impacts of groundwater and irrigation on bluff stability; and, visual impacts of necessary/required protective structures.</p> <p>If a comprehensive plan is not submitted to, reviewed and approved by the Coastal Commission as an amendment to this land use plan by November 17, 1995, then no additions or expansions to existing structures shall be permitted on coastal blufftop lots except for minor additions or expansions that comprise no greater than a 10 percent increase above the existing gross floor area or 250 square feet whichever is greater, provided such additions/expansions are located at least 40 feet from the coastal blufftop edge, the addition /expansion is constructed in a manner so that it could be removed in its entirety, and the applicant agrees, in writing, to participate in any comprehensive plan adopted by the City to address coastal bluff recession and shoreline erosion problems in the City. In addition, until such a comprehensive plan is approved by the City of Encinitas and the Coastal Commission as an amendment to the LCP, the City shall not permit the construction of seawalls, revetments, breakwaters, cribbing, or similar structures for coastal erosion except under circumstances where an existing principal structure is imminently threatened and, based on a thorough alternatives analysis, an emergency coastal development permit is issued and all emergency measures authorized by the emergency coastal development permit are designed to eliminate or mitigate adverse impacts on local shoreline sand supply.</p> |
| <p><b>Public Access</b></p> <p><b>3a</b></p>       | <p><b><u>City of Carpinteria, Policy D. 1.6:</u></b> A bluff top hiking/biking trail corridor at least 20 feet in width, or wider if necessary to accommodate separated bikeway and pedestrian lanes or to accommodate constraints (such as existing vegetation, uneven terrain or ESHA buffers) shall be located so as to ensure that continuous trail access can be maintained over a period of time equivalent to the design life of proposed adjacent development (100 years). The necessary width of the corridor shall be based on the bluff retreat determined on a site-specific basis, pursuant to Policy A.1.1.</p> <p><b><u>A. 1.1:</u></b> As part of any development proposed on the Bluffs that may be affected by coastal bluff retreat during the</p>  |

| TYPE OF POLICY  | JURISDICTION  |
|---|---|
|   | <p>design life span (100 years) of the development and, or which, by virtue of its proposed location may constrain potential relocation of public access or existing development including the railroad tracks subject to coastal rate of bluff retreat, the project applicant(s) will be required to submit geotechnical studies assessing the site-specific rate of bluff retreat. Geotechnical studies shall include the relevant geologic cross-section and shall calculate the bluff recession rate based on the most erodible portion of the bluff (generally, the marine terrace) and shall be performed by a qualified engineering geologist experienced in coastal process analysis. Structures shall be set back a sufficient distance so as to protect the structure from bluff retreat during its anticipated life span (100 years) and so as to protect bluff top coastal access amenities and existing development including any future need to relocate the railroad tracks located between the proposed development and the bluff edge for an equivalent life span (100 years), to the maximum extent feasible and to avoid the installation of shoreline protective devices on the beach and bluff. Open space and/or active and passive recreational uses (e.g., trails) are the only acceptable uses located within this setback with the exception of existing development, such as railway transportation.</p> |
| <p><b>Public Access</b><br/><b>3b</b></p>   | <p><b><u>Carmel Area of Monterey County Specific Policies 2.7.4.10, pg. 38</u></b> Revetments, groins, seawalls, or retaining walls, and other such construction that alters natural shoreline processes shall be permitted only where required for the protection of existing development. These structures shall not impede lateral beach access and shall respect, to the greatest degree possible, natural landform and visual appearance.</p>  |
| <p><b>Public Access</b><br/><b>3c</b></p>   | <p><b><u>City of Santa Barbara Marine Resources Policy 6.5</u></b> seawalls, revetments, bulkheads and all other permitted structures shall not encroach upon any beach area to a degree which impedes lateral access along the beach at any tide condition.</p>  |
| <p><b>Public Access</b><br/><b>3d</b></p>   | <p><b><u>Marin County LUP, Policy 4</u></b> Construction of shoreline protection measures otherwise permitted by LCP policies shall accommodate previously existing shoreline access.</p>   |
| <p><b>Public Access</b><br/><b>3e</b></p> <p><b>Public Access</b><br/><b>3e</b><br/><b>(cont'd)</b></p> | <p><b><u>Del Monte County LCP/Zoning Ordinance C. 1 and LCP Policy 11</u></b></p> <p><b>C. Lateral Access</b></p> <p><b>1.</b> New development along the immediate shoreline shall provide lateral access by access easements along the shoreline, inland of the mean high tide to the first line of vegetation or to the crest of the paralleling bluff in areas of coastal bluffs.</p> <p>No permit shall be issued for a project which obstructs lateral access on the immediate shoreline, inland of the mean high tide to the first line of vegetation, or the crest of the paralleling bluff. Exceptions to these requirements would be for the placement of navigational aids or shoreline protective devices to protect existing structures (i.e.,</p>  |

| TYPE OF POLICY                                      | JURISDICTION  |
|---|---|
|   | <p>Section 21.35.040(B) (2).</p> <p><b>11.</b> No permit shall be issued for a project which obstructs lateral access on the immediate shoreline, inland of the mean high tide line to the first line of vegetation, or the crest of the paralleling bluff. The exception would be for the placement of navigational aids or shoreline protective devices to protect existing structures, i.e., houses, roadways, and parking areas.</p>  |
| <p><b>Existing Development</b></p> <p><b>4a</b></p> | <p><b><u>Santa Barbara County, Seawall and Shoreline Structures, Policy 3.1:</u></b> Seawalls shall not be permitted unless the County has determined that there are no other less environmentally damaging alternatives reasonably available for protection of existing principal structures. The County prefers and encourages non-structural solutions to shoreline erosion problems, including beach replenishment, removal of endangered structures and prevention of land divisions on shorefront property subject to erosion; and, will seek solutions to shoreline hazards on a larger geographic basis than a single lot circumstance. Where permitted, seawall design and construction shall respect to the degree possible natural landforms. Adequate provision for lateral beach access shall be made and the project shall be designed to minimize visual impacts by the use of appropriate colors and materials.</p> |
| <p><b>Existing Development</b></p> <p><b>4b</b></p> | <p><b><u>City of Santa Barbara, Policy 6.3</u></b></p> <p><b><u>Policy 6.3:</u></b> Seawalls, revetments and bulkheads shall not be permitted unless the City has determined that they are necessary to, and will accomplish the intent of protecting existing principal structures, and that there are not less environmentally or aesthetically damaging alternatives such as relocation of structures, sand augmentation, groins, drainage improvements, etc. Determinations permitting such structures shall be based upon the findings and recommendations of geology, soils and engineering reports prepared by licensed and registered professionals in those fields.</p>  |
| <p><b>Existing Development</b></p> <p><b>4c</b></p> | <p><b><u>San Mateo County, Hazards Component, Policy 9.12:</u></b></p> <p><b><u>Limited Protective Shoreline Structures:</u></b></p> <p><b>a)</b> Permit construction of shoreline structures such as retaining walls, groins, revetments, and breakwaters only in accordance with the following conditions when: (1) necessary to serve coastal-dependent uses, to protect existing development, or to protect public beaches in danger of erosion, (2) designated to eliminate or mitigate adverse impacts on local shoreline sand supply, and (3) non-structural methods (e.g., artificial nourishment) have been proved to be infeasible or impracticable.</p> <p><b>b)</b> Protect existing roadway facilities which provide public access to beaches and recreational facilities when</p>   |

| TYPE OF POLICY   | JURISDICTION  |
|--|---|
|  | <p>alternatives routes are not feasible and when protective devices are designed in accordance with the requirements of this Component and other LCP policies.</p>  |
| <p><b>Historical Background/<br/>Basis for Limiting Shoreline Structures</b></p> <p><b>5</b></p> | <p><b><u>City of Santa Barbara:</u></b> Water and Marine Resources section re: Dredging Activities and Seawalls, pg. 3–67 ff.</p> <p>Dredging activities are of major significance for the City’s shoreline. Development of the Harbor beginning in the late 1920s, while providing facilities for the commercial fishing industry and recreational opportunities for generations of local citizens and visitors, was achieved not without environmental costs. Serious problems associated with sand accretion and beach erosion occurred from the outset. The littoral transport of beach sand was arrested by emplacement of the Breakwater. Sand impoundment occurs within the Harbor for the same reason. The sand that deposits at the Harbor site would, if not removed, accumulate to the point of filling in the Harbor. Downcoast beaches have never fully recovered from the initial blockage of easterly sand-movement.</p> <p>Replenishment of sand for beaches to the east is dependent upon Harbor dredging efforts. Without this artificial nourishment, downcoast beaches are exposed to wave attack and shoreline erosion ensues. Sand is normally transported downcoast by the longshore current and deposited by the energy-generating forces of wave refraction. This phenomenon of littoral drift is limited to the breaker and near-breaker zones. Thus, when shoreline structures, such as breakwaters and groins, intercept the littoral drift and curtail sand supply, artificial nourishment becomes imperative...</p> |
| <p><b>Hazard Area</b></p> <p><b>6a</b></p>   | <p><b><u>San Luis Obispo County, Hazards Policy 7:</u></b> The GSA combining designation in coastal areas of the county is amended to include all coastal bluffs and cliffs greater than 10 feet in vertical relief and that are identified in the Assessment and Atlas of Shoreline Erosion (DNOD, 1977) as being critical to future or present development. Maps clearly distinguish the different geologic and seismic hazards which the county covers by the GSA combining designation. These hazards shall include steep slopes, unstable slopes, expansive soils, coastal cliff and bluff instability, active faults, liquefaction and tsunami. [THIS POLICY SHALL BE IMPLEMENTED BY DESIGNATING GSA AREAS ON THE COMBINING DESIGNATION MAPS AND PURSUANT TO SECTION 23.07.080 OF THE CZLUO.]</p> <p><b><u>San Luis Obispo County Coastal Zone Land Use Ordinance (CZLUO), Section 23.07.080, Geologic Study Area (GSA):</u></b> A Geologic Study Area combining designation is applied by the Official Maps (Part III) of the Land Use Element, to areas where geologic and soil conditions could present new developments and their users with potential hazards to life and property. These standards are applied where the following conditions exist:</p>  |

| TYPE OF POLICY                             | JURISDICTION   |
|--|--|
|  | <p>... .</p> <p><b>d. Erosion and stability hazard — coastal bluffs.</b> Areas along the coast with coastal bluffs and cliffs greater than 10 feet in vertical relief that are identified in the Coastal Erosion Atlas, prepared by the California State Department of Navigation and Ocean Development (1977), in accordance with Hazards Policy No. 7 of the Local Coastal Plan.</p>   |
| <p><b>Hazard Area</b></p> <p><b>6b</b></p> | <p><b><u>City of Sand City, Natural Hazards Policies,</u></b></p> <p><b>4.3.10:</b> Encourage the clustering of developments away from potentially hazardous areas and condition project permits based upon recommendations presented in the geologic report.</p> <p><b>a)</b> South of Bay Avenue, in no event shall the setback be less than 200 feet from the mean high water line. The mean high water line shall be established and adopted by the City as a part of the Implementation Plan for this area.</p> <p><b>b)</b> An active recreation beach zone and public amenity zone shall be established between the mean high water line and the building envelope. Uses allowed in the active beach and public amenity zones are described in Policy 6.4.1 of this Plan.</p> <p><b>4.3.11:</b> No development will be allowed in the tsunami runup zone, unless adequately mitigated. The tsunami run-up zone and appropriate mitigation, if necessary, will be determined by the required site-specific geological investigation.</p> <p><i>Coastal Commission Staff Comment: These policies apply to a shoreline composed largely of sand dunes with little in the way of “typical” vertical coastal bluffs. Thus the 200 foot setback mentioned in a) should not be construed as applying to development on top of a “ typical” vertical coastal bluff.</i></p> |
| <p><b>Hazard Area</b></p> <p><b>6c</b></p> | <p><b><u>San Mateo County, Hazards Component Policies:</u></b></p> <p><b>9.1 Definition of Hazard Areas :</b> Define hazardous areas as fault zones and land subject to dangers from liquefaction and other severe seismic impacts, unstable slopes, landslides, coastal cliff instability, flooding, tsunamis, fire, and steep slopes (over 30%)</p> <p><b>9.2 Designation of Hazard Areas :</b> Designate hazardous areas in the Coastal Zone as those delineated on the Geotechnical Hazards Synthesis Map, the Floodway Boundary and Floodway Maps and Flood Insurance, Rate Maps adopted under Chapter 35.5 of the San Mateo County Zoning Regulations, and the Natural Hazards Map in the Natural Hazards Chapter of the General Plan.</p>   |



| TYPE OF POLICY  | JURISDICTION   |
|---|--|
| <p><b>Hazard Area</b><br/><b>6c</b><br/><b>(cont'd)</b></p> | <p><b><u>9.3 Regulation of Geologic Hazard Areas</u></b> : Apply the following regulations of the Resource Management (RM) Zoning Ordinance to designated geologic hazard areas:</p> <ul style="list-style-type: none"> <li><b>a.</b> Section 6324.6 - Hazards to Public Safety Criteria</li> <li><b>b.</b> Section 6326.2 - Tsunami Inundation Area Criteria</li> <li><b>c.</b> Section 6326.3 - Seismic Fault/Fracture Area Criteria. Require geologic reports prepared by a certified engineering geologist consistent with “Guidelines for Geologic/Seismic Reports” (CDMG Notes #370 for all proposed development.</li> <li><b>d.</b> Section 6326.4 - Slope Instability Area Criteria.</li> </ul> <p><b><u>9.10 Geological Investigation of Building Sites</u></b>: Require the County Geologist or an independent consulting certified engineering geologist to review all building and grading permits in designated hazardous areas for evaluation of potential geotechnical problems and to review and approve all required investigations for adequacy. As appropriate and where not already specifically required, require site specific geotechnical investigations to determine mitigation measures for the remedy of such hazards as may exist for structures of human occupancy and/or employment other than those considered accessory to agriculture as defined in Policy 5.6.</p> <p>“Hazards areas” and “hazards” are defined as those geotechnical hazards shown on the current Geotechnical Hazards Synthesis Maps of the General Plan and the LCP Hazards Maps. A copy of the report of all geologic investigations required by the California Division of Mines and Geology shall be forwarded to that agency.</p> |
| <p><b>New Development</b><br/><b>7a</b></p>                 | <p><b><u>Carmel Area of Monterey County, General and Specific Policies</u></b></p> <p><b><u>2.7.3.3</u></b>: New land divisions which create commitment to new or intensified development shall be approved only where it can be demonstrated that development of each proposed parcel and construction of the proposed access roads will neither create nor significantly contribute to erosion, geologic instability, flooding, or fire hazard, not require construction of new protective devices which would substantially alter natural landforms.</p>  |
| <p><b>New Development</b><br/><b>7b</b></p>                 | <p><b><u>San Mateo County, Hazards Component, Policy 9.11</u></b>: Locate new development (with the exception of coastal dependent uses or public safety recreational facilities) in areas where beach erosion hazards are minimal and where no additional shoreline protection is needed.</p>   |
| <p><b>New Development</b></p>                               | <p><b><u>City of Grover Beach, Marine Resource Areas, Sand Dunes, Policy 1</u></b>: No development shall be allowed in the vegetated dune areas; development adjacent to vegetated dunes shall be sited and designed to prevent impacts which</p>  |

| TYPE OF POLICY   | JURISDICTION  |
|--|---|
| 7c   | would significantly degrade the vegetated dunes. Retaining fences, walls, or other structures or earth moving activities shall be allowed only to protect existing structures.  |
| <p>New Development<br/>7d</p> <p>New Development<br/>7d<br/>(cont'd)</p> | <p><b><u>Marin County, Unit 1, LCP Policies on Natural Dune and Sandy Beach Protection</u></b></p> <p><b><u>Policy 20:</u></b> Development of other shorefront lots within the Stinson Beach and Seadrift areas shall assure preservation of the natural sand dune formations in order to protect environmentally sensitive dune habitat and vegetation and to maintain the natural protection from wave runup that such natural dunes provide. Where no dunes are evident, any new development on oceanfront lots shall be set back behind the first line of terrestrial vegetation to the maximum extent feasible, in order to minimize the need for protective works, to protect sandy beach habitat, and to provide a buffer area between private and public use areas in order to protect both the scenic and visual character of the beach, and the public right of access to the use and enjoyment of dry sand areas.</p> <p><b><u>Policy 21:</u></b> No additional subdivision of beachfront lots shall be permitted in recognition of the cumulative negative impacts such divisions would have on both public and private use of the beach, except if a finding is made that such a subdivision will be consistent with the above policy. Similarly, the erection of fences, signs, or other structures seaward of any existing or proposed development and the modification of any dune or sandy beach area shall not be permitted except as provided in Chapter III of the LCP in order to protect natural shoreline processes, the scenic and visual character of the beach, and the public and private use of dry sand areas in accordance with Section 30211 of the Coastal Act.</p> |
| New Development<br>7e  | <b><u>Malibu/Santa Monica Mountains, Bluff and Beach Erosion Policy 165:</u></b> No further permanent structures shall be permitted on a bluff face, except for engineered stairways or accessways to provide beach access where no feasible alternative means of public access exists.   |
| New Development<br>7f  | <p><b><u>City of Encinitas Hazards Policy 1.6f:</u></b> The City shall provide for the reduction of unnatural causes of bluff erosion, as detailed in the Zoning Code, by:...</p> <p>Requiring new structures and improvements to existing structures to be set back...40 feet from coastal blufftop edge with exceptions to allow a minimum coastal blufftop setback of no less than 25 feet. For all development proposed on coastal blufftops, a site-specific geotechnical report shall be required. The report shall indicate that the coastal blufftop setback will not result in risk of foundation damage resulting from bluff erosion or retreat to the principal structure within its economic life and with other engineering evidence to justify the coastal blufftop setback.</p> <p>On coastal bluffs, exceptions to allow a minimum setback of not less than 25 feet shall be limited to additions or</p>  |

| TYPE OF POLICY                        | JURISDICTION  |
|---------------------------------------|---|
|                                       | <p>expansions to existing principal structures which are already located seaward of the 40 foot coastal blufftop setback, provided the proposed addition or expansion is located no further seaward than the existing principal structure, is set back a minimum of 25 feet from the coastal blufftop edge, and the applicant agrees to remove the proposed addition or expansion, either in part or entirely, should it become threatened in the future.</p> <p>In all cases, all new construction shall be specifically designed and constructed such that it could be removed in the event of endangerment and the applicant shall agree to participate in any comprehensive plan adopted by the City to address coastal bluff recession and shoreline erosion problems in the City</p> <p>This does not apply to minor structures that do not require a building permit, except that no structures, including walkways, patios, patio covers, cabanas, windscreens, sundecks, lighting standards, walls, temporary accessory building not exceeding 200 square feet in area, and similar structures shall be allowed within five feet from the bluff top edge... .</p>  |
| <p><b>Emergency</b><br/><b>8a</b></p> | <p><b><u>Marin County Policies 7 and 8, Shoreline Protection and Hazards</u></b></p> <p>7. The County of Marin through the LCP and other documentation has identified those coastal areas potentially subject to significant wave and run-up erosion.</p> <p>8. It shall be County policy to encourage property owners subject to ocean-front erosion hazards to develop responses to such hazards prior to emergency conditions. Where contiguous properties are subject to generally similar erosion hazards, joint program development should occur.</p>   |
| <p><b>Emergency</b><br/><b>8b</b></p> | <p><b><u>City of Encinitas, Section 30.34.020, Coastal Bluff Overlay Zone, Subsection E, Temporary Emergency Protection Devices</u></b>: Notwithstanding other regulations of the City, the City Manager or his/her designee may permit the installation of temporary emergency protection/retention facilities (such as riprap, walls, erosion control devices, etc.) on or at the base of a coastal bluff if:</p> <ol style="list-style-type: none"> <li>1. Enclosed or principal buildings at the top of an ocean bluff are threatened by a potential bluff failure/collapse.</li> <li>2. The threat is imminent. A statement of a State-licensed engineer or engineering geologist establishing an imminent threat may be required if the City Engineer is not able to determine the imminent threat.</li> <li>3. Documentation shall be provided that the proposed temporary protection is the minimum necessary to address the emergency and to assure minimal encroachment onto sandy beach area. In addition, construction access and staging plans shall be submitted which document that no public beach parking areas will be utilized for the interim storage of materials or equipment and that overnight storage of equipment or materials will not be permitted on the sandy beach.</li> </ol> |
| <p><b>Emergency</b></p>               | <p><b><u>San Luis Obispo County, Section 23.03.045, Emergency Permits, Coastal Zone Land Use Ordinance</u></b>: The</p>   |

| TYPE OF POLICY                      | JURISDICTION  |
|-------------------------------------|---|
| <p><b>8c</b></p>                    | <p>purpose of this section is to establish procedures for the issuance of emergency permits in situations that constitute an emergency as defined by this section. Emergency permits may be granted by the Planning Director as provided by this section, in accordance with Section 30624 of the Coastal Act and Sections 13329 of Title 14 of the California Administrative Code.</p> <p><b>a.</b> Emergency defined. For the purposes of this section, an emergency is a sudden, unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property or essential public services.</p> <p><b>b.</b> Permit procedure. In cases of such emergency, the Planning Director may issue an emergency permit in accordance with the following provisions:</p> <p>(1) Applications in cases of emergencies shall be made to the Planning Director in writing if time allows, or by telephone or in person if time does not allow.</p> <p>...</p> <p>(6) Within 30 days of the notification required in subsection b(1) of this section, the property owner shall apply for a land use permit as required by this title and any construction permits required by Title 19 of this code. Failure to file the applications and obtain the required permits shall result in enforcement action pursuant to Chapter 23.10 of this code.</p> <p>(7) The Planning Director shall not issue an emergency permit for any work to be undertaken on any tidelands, submerged lands, or on public trust lands, whether filled or unfilled; requests for emergency work in these areas shall be referred to the California Coastal Commission.</p> |
| <p><b>Regional</b><br/><b>9</b></p> | <p><b><u>BEACON (Beach Erosion Authority for Control Operations and Nourishment)</u></b>, a Joint Powers Authority among the cities of Carpinteria, Oxnard, Port Hueneme, Santa Barbara, and San Buenaventura (Ventura), and the counties of Santa Barbara and Ventura; please contact the Commission's Ventura office for further information.</p>   |

## Exhibit A

- Barnett, M.R. and H. Wang. 1988. Effects of a Vertical Seawall Profile Response. *Proceedings of the 21<sup>st</sup> Coastal Engineering Conference*, Delft, The Netherlands, American Society of Civil Engineers.
- California Department of Navigation and Ocean Development (now called Department of Boating and Waterways). 1976. Shore Protection in California. Sacramento.
- Dean, Robert G. 1987. Coastal Sediment Processes: Toward Engineering Solutions. *Proceedings of Coastal Sediments '87*, American Society of Civil Engineers, p. 1843–1857. LCP
- Fulton–Bennett, Kim and Gary B. Griggs. 1986. Coastal Protection Structures and Their Effectiveness. Joint publication of the State of California, Department of Boating and Waterways, and the Marine Sciences Institute of the University of California at Santa Cruz.
- Griggs, Gary B., J.E. Pepper, and M.E. Jordan. 1992. California's Coastal Hazards: A Critical Assessment of Existing Land Use Policies and Practices.
- Griggs, Gary B. and James F. Tait. 1988. The Effects of Coastal Protection Structures on Beaches Along Northern Monterey Bay, California. *Journal of Coastal Research*, Special Issue No. 4, p. 93–111.
- Griggs, Gary B., James F. Tait and K. Scott. 1990. The Effects of Coastal Protection Structures On Beaches Along Northern Monterey Bay, California. *Proceedings of the 22nd International Coastal Engineering Conference*, Delft, The Netherlands, American Society of Civil Engineers, p. 2810–2823.
- Griggs, Gary B., James F. Tait, and W.W. Corona. 1994. The Interaction Of Seawalls and Beaches: Seven Years of Field Monitoring, Monterey Bay, California. *Shore and Beach*, Vol. 62, No. 3, p. 21–28.
- Inman, Douglas. 1971. Nearshore Processes.
- Kraus, Nicholas C. 1988. Effects of Seawalls on the Beach: An Extended Literature Review. *Journal of Coastal Research*, Special Issue No. 4, p. 1–28.
- Kraus, Nicholas C. 1996. Effects of Seawalls on the Beach: Part I, An Updated Literature Review. *Journal of Coastal Research*, Vol. 12: p. 691–701.

- MacDonald, H.V. and D.C. Patterson. 1985. Beach Response to Coastal Works Gold Coast, Australia. *Proceedings of the 19<sup>th</sup> Coastal Engineering Conference*, American Society of Civil Engineers, p. 1522–1538.
- McDougal, W.G., M.A. Sturtevant and P.D. Komar. 1987. Field and Laboratory Investigations on the Impact of Shoreline Stabilization Structures on Adjacent Properties. *Proceedings of Coastal Sediments '87*, American Society of Civil Engineers, p. 961–973.
- McDougal, W.G., N.C. Kraus and H. Ajiwibowo. 1996. The Effects of Seawalls on the Beach: Part II, Numerical Modeling of Supertank Seawall Tests. *Journal of Coastal Research*, Vol. 12: p. 702–713.
- National Research Council. 1987. Responding to Changes in Sea Level, Engineering Implications. Committee on Engineering Implications of Changes in Relative Mean Sea Level, Marine Board, National Academy Press, Washington, D.C.
- National Research Council. 1995. Beach Nourishment and Protection. Committee on Beach Nourishment and Protection, Marine Board, National Academy Press, Washington D.C.
- Skidaway Institute of Oceanography. 1981. Saving the American Beach: A Position Paper by Concerned Coastal Geologists. Skidaway Institute Conference on American's Eroding Shoreline.
- Skidaway Institute of Oceanography. 1985. National Strategy for Beach Preservation. Second Skidaway Institute Conference on American's Eroding Shoreline.
- Tait, James F. and Gary B. Griggs. 1990. Beach Response to the Presence of a Seawall: A Comparison of Field Observations. *Shore and Beach*, Vol. 58, No. 1 p. 11–28.
- Walton, T.L. And W. Sensabaugh. 1979. Seawall Design On The Open Coast. Florida Sea Grant College, Report No. 29.
- Wiegel, Robert L. 1994. ASBPA Coastal Project Award for 1992/1993. *Shore and Beach*, Vol. 62, No. 1, p. 2.